REMARKS

New claim 19 is supported in the specification at page 9, lines 3-6. New claim 20 is supported in the specification at page 10, line 20. In response to the Office Action:

[1] The title is amended as suggested.

[2] Claims 11 and 13 are amended as suggested. Withdrawal of the objection is requested.

[3-4] Claims 4-6 and 13-18 were rejected under §112, second paragraph. The claims are amended. Withdrawal of the rejection is requested.

[5-6] Claim 1 was rejected under §102 over Walley '576.

[7] Claims 1-7 and 16 were rejected under §102 over Murata '146.

[8-9] Claims 8, 17, and 18 were rejected under §103 over Murata in view of Butcher.

[10] Claim 9 was rejected under §103 over Murata and Butcher in view of Official Notice.

[11] Claims 10-15 were rejected under §103 over Murata in view of Wiatrowski '941.

The rejections above are respectfully traversed on the following grounds:

Claim 1. The presently-amended claim 1 recites

> *a limiter which outputs said pulse code modulation data when the pulse code modulation data is within a range from an upper limit data to a lower limit data, outputs the upper limit data when the pulse code modulation data is greater than the upper limit data, and the outputs lower limit data when the pulse code modulation data is lower than the lower limit data, in accordance with said detection result.*

This feature is supported at page 8, lines 11-14 and is exemplified in Fig. 2, described on pages 9-10. The error detector's signal, detection result CRCERR, controls the logic gates 203A and

203B. The claimed upper and lower limit data are shown as upper and lower limit "values" in Fig. 2.

Walley. The Examiner points to Walley at col. 2, lines 47-63, describing a clipping circuit 25. With respect, Walley cannot anticipate.

(1) Walley states that its circuit limits the "maximum excursion," i.e. the upper limit data (col. 2, lines 52 and 63); there is no disclosure of any *lower* limit data. The clipping is "conventional" (col. 2, line 48) and conventional clipping is understood to be for reducing loud signals, which are always high, not low. Even if conventional clipping were taken to mean something else, there would still be no disclosure of two distinct data limits, as claimed.

New dependent claim 19 more specifically recites two amplitudes of signal, and more clearly distinguishes over Walley. New claim 20 also distinguishes over Walley.

(2) The illustrated clipping circuit will not actually do any clipping because the "CLIP" signal goes to the D/A 18, not the clipping circuit 25 (see Fig. 1 and col. 2, lines 50-53). The illustrated circuit, and the reference, are faulty.

Murata. The Examiner asserts (page 5 of the Action) that Murata anticipates the claimed upper limit data and lower limit data with its clip value 114, shown in Fig. 25. However, Murata in Fig. 25 does not disclose two limit data, but instead only a single limit datum 104 (i.e., a single absolute value), where the same value 104 is applied to positive and negative excursions beyond a certain amplitude.

New dependent claim 19 more specifically recites two amplitudes of signal, and more clearly distinguishes over Murata, as does new claim 20.

Claims 2-3. The Examiner asserts (page 5) that the *one* comparator 11a anticipates the Applicants' *two* claimed comparators. The Examiner justifies this double application of a single element by asserting that comparator 11a outputs two distinct comparison values. However, as

noted above, Murata discloses only one "amplitude" (absolute value), not two data limits, upper and lower. (As noted, new claim 19 recites amplitude, i.e., absolute value.)

As to claim 3, it recites two distinct logic circuits, one for the first and one for the second comparison results. However, Murata discloses only one comparator 11a and outputs only one result.

Other References. The other applied references also do not anticipate the claimed features.

Butcher discloses switched attenuation, not clipping (switch 40 in Figs. 2 and 3 bypasses resistor 28 or 48 under control of the data decoder).

Wiatrowski discloses adjusting a threshold by specifically attenuating a signal as shown in Figs. 2A and 2B, so that the extremes coincide with the midpoints of the original "symbols" (areas delineated by dashed lines in the drawing; see col. 2, lines 36-39).

Claims 8 and 17. Amended claims 8 and 17 recite a threshold value setting portion having *an average calculating portion which calculates an average value of a numerical value data of said pulse code modulation data and which outputs said average value.* On pages 11-12 of the Action, the Examiner asserts that Butcher discloses this feature at col. 3, lines 1-8.

The Applicants respectfully disagree. Butcher does not mention the word "average" in the applied passage, nor is any related word such as "mean" seen. Neither does Butcher disclose calculating a numerical average value of anything, much less an average numerical value data of pulse code modulation data. The applied passage deals only with setting the *speed* of a limiter and bias circuit 16 (Fig. 1) and the speed does not affect the long-term output value from the limiter, only how fast it arrives at its output. The purpose of slowing the speed is to prevent false DC offsets due to long strings of 1's or 0's; see col. 3, lines 9-15.

Butcher's Figs. 2 and 3 disclose how the limiter and bias circuit 16 (or 40) works. It is an RC device working with an analog, radio-signal input. An RC circuit is an integrating circuit, not an averaging circuit. Furthermore, any such analog circuit is not a "calculating" circuit, nor is a thing that "calculates [from] *numerical* value data."

The output of the data decoder 20 consists of just two states, "fast" or "slow," and this does not represent an average value of anything.

Furthermore, the combination of Murata and Butcher is respectfully traversed. The Examiner asserts that it would have been obvious to use an average instead of a maximal value in the clipping circuit of Murata, but the Applicants believe that a clipping circuit which clipped everything above the average value would have no output at all. The Examiner is invited to consider Fig. 25 of Murata, where the average value is indicated by a dashed line in the middle of the signal.

The dependent claims are allowable, *inter alia*, for the reasons above.

Claim 10. The present invention according to the amended claim 10 comprises *a counter which counts the number of times that said pulse code modulation data is over said limit data and which outputs a count result having a voltage level when said count result is over a predetermined value*. The Examiner asserts (pages 14-15 of the Action) that Wiatrowski discloses a counter which counts the number of times that pulse code modulation data is over a limit. The Applicants respectfully disagree.

Wiatrowski writes (col. 4, line 54), "Each time [a measurement] is above the upper threshold, that threshold is increased. Each time a [measurement] is below the upper threshold, a value called a symbol count is increased by one." Thus, counting only takes place when the measurement is *under* the threshold, not *over* as the Applicants' claim recites; when it is over, the threshold is altered.

The threshold is changed depending on the"symbol count." This count is increased by one until the symbol count reaches seven, after which the upper threshold is decreased and the symbol count is reset (col. 4, lines 58-66). Thus, Wiatrowski does not disclose counting the number of times that the pulse code modulation data is over a limit, it counts the number of times it is under a limit. The reference also fails to disclose *output*[ing] *a count result having a voltage level when said count result is over a predetermined value*. Instead, when the a predetermined value (seven) is reached, it resets rather than outputting a voltage.

The Examiner asserts that combination would have been obvious to count the number of times Murata's signal went over a limit, so that a single high value would not set the threshold too high. The Applicants respectfully disagree. There is nothing on the record to indicate that a single high value would affect the threshold of Murata, which appears to clip anything over the clip value 114, regardless of amplitude.

The dependent claims are allowable, *inter alia*, for the reasons above.

Respectfully submitted,

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